



VQAR-II

UNIT-III

MACHINE INPUT OUTPUT

Directions(1-5): A word and number arrangement machine when given an input line of words and numbers rearranges them following a particular rule in each step. The following is an illustration of input and rearrangement.

Input: variety 35 spices 21 for 79 good 54 taste 46
Step I: for variety 35 spices 21 79 good 54 taste 46
Step II: good for variety 35 spices 79 54 taste 46 21
Step III: taste good for variety 35 spices 54 46 21 79
Step IV: spices taste good for variety 54 46 21 79 35
Step V: variety spices taste good for 46 21 79 35 54
Step V is the last step.

Find the various steps and final output for the input given below.

Input: Strong 64 relations 25 depends 38 on 53 base 45

1. Which of the following represents the fifth element from left end in step IV and fourth element from right end in step II respectively?
A. relation -38 B. 25 - 53 C. relation - base D. relation - 53 E. None of these
2. What is the difference of the odd numbers that come between 'strong' and 'base' in step I?
A. Only one odd number comes in between B. 14 C. 28
D. No odd number comes in between E. Can't be determined
3. With respect to the step V, Four of the following five are alike in a certain way and the form a group. Which of the following does not belong to that group?
A. 38 B. base C. depends D. 53 E. 45
4. Which of the following elements is third to the left of fourth element from right end in step III?
A. 53 B. relation C. base D. depends E. None of these
5. What is the sum of the numbers that are towards the right of 'base' in step I?
A. 109 B. 102 C. 91 D. There is only one number E. None of these

Directions(6-10): Read the given information carefully and answer the questions given beside:

The first step is the resultant of the product and sum of the digits in input as per the lines indicated. Further steps are obtained by applying certain logic. Numbers of step



It have been obtained by using atleast 1 digit of each number in step 1. Each step is a resultant of previous step.

6. Which one of the following is half of the value obtained in final step?
A. 151250 B. 142870 C. 160080 D. 202500 E. None of these
7. Which one of the following is a number obtained in step II?
A. 1550 B. 1650 C. 1200 D. 1100 E. None of these
8. Find the difference of the numbers obtained in step II?
A. 660 B. 550 C. 630 D. 420 E. None of these
9. Which one of the following is one of the numbers obtained in step I ?
A. 32 B. 44 C. 56 D. 50 E. None of these
10. Which one of the following is the required final step?
A. Step V B. Step VI C. Step IV D. Step VII E. None of these

Directions(11-14): Study the following information carefully and answer the questions given beside.

Input: 781 vsskt 651 ltsk 486 deef 351 jklm 581 tuvw

Step 1: 351 781 vsskt 651 ltsk 486 jklm 581 tuvw deef

Step 2: 651 351 781 vsskt ltsk 486 581 tuvw deef jklm

Step 3: 581 651 351 781 vsskt 486 tuvw deef jklm ltsk

Step 4: 781 581 651 351 vsskt 486 deef jklm ltsk tuvw

Step 5: 486 781 581 651 351 deef jklm ltsk tuvw vsskt

Step 5 is the final step

As per the pattern followed in the above steps, find out for given input:

Input: 555 cat 651 dog 481 gold 231 modi 631 ruchi

11. In which step we will get the following output?
651 631 555 231 481 modi ruchi cat dog gold.
A. Step 5 B. Step 4 C. Step 3 D. There is no such step
E. None of these
12. If in step 4 '651' is related to '231' & '555' is related to 'cat', then following the same pattern '631' is related to _____
A. ruche B. 231 C. 555 D. cat E. gold
13. Which of the following statements is correct regarding position of 'ruchi' in the 4th step?
A. Third to left of 651 B. Second to right of gold C. Second to right of 631
D. Second to right of 231 E. Second to left of gold
14. In step 5 which of following word or number is 3rd to the right of the word/number which is 2nd to the right of '651'?
A. modi B. gold C. cat D. 555 E. 231



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Directions(15-19): A word and number arrangement machine when given an input line of words and numbers rearranges them following a different rule in each step.

The following is an illustration of input and rearrangement.

Input: always begin from bottom mount high

Step I: aabdho eimty inou ggnouy gmnou isst

Step II: 3 44 31 23 2 49

Step III: 48 18 72

Step IV: 3 9

Step V: 144

Step V is the last step of the arrangement.

Following the same pattern solve the given input.

Input: fear creates demons only hope defeat

15. What will be the value obtained in final step of the arrangement?

- A. 36 B. 26 C. 81 D. 49 E. 72

16. What is the product of the numbers obtained in step IV?

- A. 36 B. 16 C. 24 D. 18 E. 12

17. Which of the following numbers will represent 'Fear' in step II?

- A. 36 B. 38 C. 25 D. 20 E. 18

18. Which of the following words will be obtained in step I?

- A. Aeit B. aeefhix C. ehmmow D. bmop E. aeegu

19. What is the sum of the numbers obtained in step III?

- A. 108 B. 282 C. 96 D. 42 E. 216

Directions(20-24): A word and number arrangement machine when given an input line of words and numbers rearranges them following a particular rule in every step.

The following is an illustration of input and rearrangement.

Input: 79 create history 88 imagined 94 every 63 leader 96

Step I: 88 79 create history imagined 94 63 leader 96 every

Step II: 88 79 96 history imagined 94 63 leader every create

Step III: 88 79 96 history imagined 94 63 every create leader

Step IV: 88 79 96 94 imagined 63 every create leader history

Step V: 88 79 96 94 63 every create leader history imagined

Step V is the last step of the arrangement.

Following the same pattern solve the given input.

Input: never 42 leaved 39 important object 53 46 anyplace 74

20. How many steps will be required to complete the given input?

- A. Three B. Seven C. Six D. Five E. Four

21. Which of the following steps will be last but one of the given input?

- A. 39 74 46 53 important 42 never leaved object anyplace
B. 39 74 46 53 42 important never leaved object anyplace



- C. 39 74 46 42 53 never leaved object anyplace important
D. 39 74 46 53 42 important never object leaved anyplace
E. None of these
22. Which of the following will be on the immediate right of 'Important' in step III?
A. Object B. Never C. 42 D. Anyplace E. 53
23. How many element(s) will be there between '74' and 'leaved' in Step IV?
A. Six B. Four C. Four D. Five E. Three
24. What is the position of 'Object' in step V?
A. Third from right end B. Second from left end C. Seventh from left end
D. Fourth from right end E. None of these

Directions(25-29): A word and number arrangement machine, when given an input line of words and numbers, rearranges them following a particular rule in each step. The following is an illustration of input and rearrangement.

Input: faster 24 and 37 rapid 61 progressive 18 requirement 85 building 93
Step I: 24 faster and 37 rapid 61 progressive 18 requirement 85 building 93
Step II: 24 progressive faster and 37 rapid 61 18 requirement 85 building 93
Step III: 24 progressive 61 faster and 37 rapid 18 requirement 85 building 93
Step IV: 24 progressive 61 requirement faster and 37 rapid 18 85 building 93
Step V: 24 progressive 61 requirement 18 faster and 37 rapid 85 building 93
Step VI: 24 progressive 61 requirement 18 building faster and 37 rapid 85 93
Step VII: 24 progressive 61 requirement 18 building 37 faster and rapid 85 93
Step VIII: 24 progressive 61 requirement 18 building 37 faster 93 and rapid 85
Step IX: 24 progressive 61 requirement 18 building 37 faster 93 rapid and 85
Step X: 24 progressive 61 requirement 18 building 37 faster 93 rapid 85 and
Step X is the final output.

Find the different steps of output using the above mentioned logic for the following input.

Input: technology 47 transfer 26 rate 72 achieving 51 extra 91 version 32

25. How many steps are needed to reach the final output?
A. Ten B. Nine C. Eight D. Eleven E. None of these
26. Which of the following is fourth to the left of '47' in step VI?
A. version B. 51 C. transfer D. 26 E. 91
27. In which of the following steps "version 91 47 rate" is seen in the same sequence?
A. Step IX B. Step VIII C. Both A or B D. Step VII E. None of these
28. Which of the following comes exactly between 51 and 91 in step III?
A. Rate B. 26 C. extra D. 72 E. None of these
29. Which of the following is seventh from the right end in final output?
A. transfer B. achieving C. extra D. 72 E. None of these



Directions(30-34): A word and number arrangement machine, when given an input line of words and numbers, rearranges them following a particular rule in each step. The following is an illustration of input and rearrangement.

Input: name 72 nest 24 near 35 nostalgic 43 narrow 67
Step1: 72 nest near 35 nostalgic 43 narrow 67 name 242
Step2: 72 nest near nostalgic 43 67 name 242 narrow 335
Step3: 72 nest nostalgic 67 name 242 narrow 335 near 343
Step4: 72 nostalgic name 242 narrow 335 near 343 nest 367
Step5: name 242 narrow 335 near 343 nest 367 nostalgic 722
Step 5 is the final output.

Find the different steps of output using the above mentioned logic for the following input.

Input: team 55 taboo 48 tackle 83 tissue 69 test 11.

30. In which of the following steps, 'taboo' is placed at third from the left end?
A. Step 1 B. Input C. Step 4 D. Either A or B E. None of these

31. Which of the following is the final output?
A. taboo 311 tackle 482 test 355 team 369 tissue 383
B. taboo 311 tackle 482 team 355 test 369 tissue 383
C. tissue 383 taboo 311 tackle 482 team 355 test 369
D. tackle 482 team 355 test 369 tissue 383 taboo 311
E. None of these

32. What is the difference between the highest and the lowest numbers of step 3?
A. 268 B. 316 C. 393 D. 413 E. None of these

33. Which of the following elements is second to the left of fourth element from the right end in step 2?
A. 83 B. tissue C. 69 D. test E. None of these

34. In which of the following steps "83 tissue taboo" is seen in the same sequence?
A. Step 4 B. Step 5 C. Step 3 D. Both Step 3 and step 4
E. None of these

Directions(35-39): An alphanumeric machine accepts letters as input and delivers output in form of numbers through different steps. Each step is obtained by applying an operation different from the previous step. Each step gives output taking input from the previous step. Below mentioned is an illustration of the same.

Input: spread joy laughter by sharing smile with masses

Step1: 9 2 11 5 6 4 7 9
Step2: 99 10 42 36
Step3: 57 26
Step4: 5
Step4 is the final output.



On the basis of above illustration find the output and different steps for the following input.

Input: being good to everyone sometimes invite sad trouble

35. If '3' is added to one of the values of step 3 then what would be its consequence on the final output?

- A. Final output will remain indifferent B. Final output will be decreased by 2
C. Final output will be decreased by 1 D. Final output will be increased by 2
E. Final output will be increased by 1

36. What is the square of the sum of the numbers of step 3?

- A. 729 B. 676 C. 784 D. 529 E. None of these

37. If in the given input 'sad' is replaced by "so" then which of the following values of step 2 will change?

- A. 20 B. 16 C. 77 D. 54 E. None of the values will change

38. Four of the following are similar in a certain way and thus form a group. Which of the following does not belong to the group?

- A. 22 B. 1 C. 55 D. 3 E. 10

39. What is the difference between the sum of all the even numbers of step 2 and the sum of all the odd numbers of step 3?

- A. 77 B. 85 C. 67 D. 46 E. 38

Directions(40-44): A word and number arrangement machine, when given an input line of words and numbers, rearranges them following a particular rule in each step. The following is an illustration of input and rearrangement.

Input: Fable 76 Quibble 24 Terrible 54 Able 82 Gamble 65

Step1: 82 Fable 76 Quibble 24 Terrible 54 Gamble 65 Able

Step2: Fable 82 76 Quibble 24 Terrible 54 Gamble Able 65

Step3: 76 Fable 82 Quibble 24 Terrible 54 Able 65 Gamble

Step4: Quibble 76 Fable 82 Terrible 54 Able 65 Gamble 24

Step5: 54 Quibble 76 Fable 82 Able 65 Gamble 24 Terrible

Step 5 is the final output.

Find the different steps of output using the above mentioned logic for the following input.

Input: Scientific 29 Majaestic 34 Fantastic 58 Hectic 77 Genetic 84

40. What is the position of '58' in step 1?

- A. Fifth from the left end B. Sixth from the right end C. Seventh from the left end
D. Fifth from the right end E. None of the above

41. In the final output, how many elements are there between the greatest and the smallest numbers of the given arrangement?

- A. Four B. Two C. Three D. Five E. None of the above

42. What is the sum of the numbers that fall between 'Scientific' and 'Majestic' in step 4?



- A. 118 B. 137 C. 119 D. 84 E. None of the above

43. Which of the following comes exactly between 'Scientific' and 'Hectic' in step 2?

- A. 58 B. Majestic , 34 and Fantastic C. 34 and 58
D. Fantastic E. None of these

44. Which of the following elements is second to the left of sixth element from right end in step 3?

- A. Genetic B. 29 C. Scientific D. 77 E. None of these

Directions(45-49): A word and number arrangement machine when given an input line of words and numbers rearranges them following a particular rule in every step. The following is an illustration of input and rearrangement.

Input: 88 25 68 56 58 83 94

Step I: 88 68 25 56 58 83 94

Step II: 88 68 94 25 56 58 83

Step III: 88 68 94 58 25 56 83

Step IV: 88 68 94 58 83 25 56

Step V: 88 68 94 58 83 56 25

Step V is the last step of the arrangement.

Following the same pattern solve the questions given below.

45. Which of the following will be step III of the input '87 37 54 98 46 29'?

- A. 98 87 29 37 46 54 B. 98 87 29 46 37 54 C. 87 98 29 37 46 54
D. 98 87 29 46 54 37 E. None of these

46. How many steps will be required to complete the arrangement '38 71 26 93 37 44 54'?

- A. II B. III C. IV D. V E. None of these

47. Which of the following would be the input step for the arrangement whose step IV is '75 49 63 45 53 16 26 41'?

- A. 45 75 49 53 16 26 63 41 B. 45 49 53 16 63 75 26 41
C. 75 63 49 53 45 16 41 26 D. 16 63 45 53 49 75 26 41
E. Can't be determined

48. Which of the following will be step IV of the input '90 29 72 84 55 76'?

- A. 84 76 55 29 90 72 B. 76 84 29 55 90 72 C. 84 76 55 29 72 90
D. 76 84 29 72 90 55 E. None of these

49. Which of the following will be '95 77 49 56 82 37' of the input '82 49 56 77 95 37'?

- A. III B. IV C. V D. VI E. None of these

ANSWERS:

Common Explanation for (1-5):



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Change in word: The words are rearranged as per ascending order of number of letters and placed at extreme left end. Change in number: The numbers are rearranged as per ascending order of sum of their digits until a single digit is obtained and shifted to extreme right end.

Note- Change in word and number takes place simultaneously at each step. Only one word and one number is changed in a step.

Reference:

Input: variety 35 spices 21 for 79 good 54 taste 46

Step I: for variety 35 spices 21 79 good 54 taste 46

Inference:

Input: strong 64 relation 25 depends 38 on 53 base 45

Step I: on strong relation 25 depends 38 53 base 45 64

Reference:

Step I: for variety 35 spices 21 79 good 54 taste 46

Step II: good for variety 35 spices 79 54 taste 46 21

Inference:

Step I: on strong relation 25 depends 38 53 base 45 64

Step II: base on strong relation 25 depends 53 45 64 38

Reference:

Step II: good for variety 35 spices 79 54 taste 46 21

Step III: taste good for variety 35 spices 54 46 21 79

Inference:

Step II: base on strong relation 25 depends 53 45 64 38

Step III: strong base on relation depends 53 45 64 38 25

Common Explanation for (6-10):

Answer:

6. 151250 is half of the value obtained in final step.

Option A, is hence the correct answer.

7. 1550 is one of the numbers obtained in step II.

Option A, is hence the correct answer.

8. As, $1550 - 1000 = 550$.

So, the Difference between the numbers obtained in step II is 550.

Option B, is hence the correct answer.

9. 50 is one of the numbers obtained in step I.

Option D, is hence the correct answer.

10. Step IV is the required final step.



Option C, is hence the correct answer.

Common explanation for (11-14):

References:

555 cat 651 dog 481 gold 231 modi 631 ruchi

Inferences:

Both word & number are rearranged simultaneously.

Number logic: the sum of digits of number is taken. Number whose sum of digits is lowest is taken and placed at first.

The words are arranged in descending order from right to left from the right end. In the first step, the words are arranged as ascending order according to the first letter of the word and so on.

Input: 555 cat 651 dog 481 gold 231 modi 631 ruchi

Step 1: 231 555 651 dog 481 gold modi 631 ruchi cat

Step 2: 631 231 555 651 481 gold modi ruchi cat dog

Step 3: 651 631 231 555 481 modi ruchi cat dog gold

Step 4: 481 651 631 231 555 ruchi cat dog gold modi

Step 5: 555 481 651 631 231 cat dog gold modi ruchi

Step 5 is the final step

Answer:

11. There is no such step.

Hence, option D is correct.

12. Step 4: 481 651 631 231 555 ruchi cat dog gold modi

Hence, option C is correct.

13. Step 4: 481 651 631 231 555 ruchi cat dog gold modi

Hence, option D is correct.

14. Step 5: 555 481 651 631 231 cat dog gold modi ruchi

Hence, option B is correct.

Common Explanation for (15-19):

Reference:

Input: always begin from bottom mount high

Step I: aabdho eimty inou ggnouy gmnou isst

Inference:

In the Step I, firstly the consonants within each word in Input step are reversed in cyclic alphabetical order after that the words thus formed are arranged according to dictionary from left to right.

For example:

The word 'Fear' after reversing the consonants in cyclic alphabetical order and arranging the letters in alphabetical order becomes 'aeiu'.



Using the same rule Step I of the given Input can be written as:

Input: fear creates demons only hope defeat

Step I: aeiu aeeghix ehmnw bmo eoks aeeguw

Reference:

Step II: 3 44 31 23 2 49

Inference:

In the Step II, the difference of numbers obtained from the sum of the numeric position in alphabetic series of each vowel and the sum of the numeric position in alphabetic series of each vowel of the same word in Step I is taken.

For example:

The vowels in the word 'aeiu' are 'a', 'e', 'i' and 'u' and numeric position of 'a', 'e', 'i' and 'u' in alphabetic is '1', '5', '9' and '21' respectively so the sum of the numeric positions of vowels is $1 + 5 + 9 + 21 = 36$. As, there are no consonants in the word 'aeiu' so we will consider 36 as the final number. And, the vowels in the word 'aeeghix' are 'a', 'e', 'e' and 'i' and numeric position of 'a', 'e', 'e' and 'i' in alphabetic is '1', '5', '5' and '9' respectively, so the sum of the numeric positions of vowels is $1 + 5 + 5 + 9 = 20$ and the consonants in the word 'aeeghix' are 'g', 'h' and 'x' and numeric position of 'g', 'h' and 'x' in alphabetic is '7', '8', and '24' respectively, so the sum of the numeric position of consonants is $7 + 8 + 24 = 39$. And, the difference of 39 and 20 is 19 so the number is 19.

Using the same rule Step II of the given Input can be written as:

Step II: 36 19 38 15 10 2

Reference:

Step III: 48 18 72

Inference:

In the Step III, the digits of first and second number are multiplied within the number and the numbers thus obtained are multiplied form a single number the same pattern is followed with third and fourth number, and fifth and sixth number.

For example:

First and second numbers from left end is Step II are '36' and '19' respectively and after multiplying the digits of '36' and '19' with the numbers we get '18' and '9', and after multiplying '18' and '9' we get 162. So the number is 162.

Using the same rule Step III of the given Input can be written as:

Step III: 162 120 0

Reference:

Step IV: 3 9

Inference:



The first and second numbers from left end in Step III are subtracted then the digits of the number thus formed are added within the number to form the first number from left end in step IV. and the same pattern is repeated with second and third number from left end in step III to form the second number from left end in step IV.

For example:

First and second numbers from left end in Step III are '162' and '120' respectively. The difference of '162' and '120' is 42 and the sum of the digits of '42' is '4 + 2 = 6'. So the number is 6.

Using the same rule Step IV of the given Input can be written as:

Step IV: 6 3

Reference:

Step V: 144

Step V is the last step of the arrangement.

Inference:

In the Step V, the sum of the numbers in step IV is taken and the number thus formed is squared.

For example:

After adding the numbers $6 + 3 = 9$ and the square of 9 is 81. So the number is 81.

Using the same rule Step V of the given Input can be written as:

Step V: 81

As it is given that Step V is the last step of the arrangement so the given input is completed.

Final Solution:

Input: fear creates demons only hope defeat

Step I: aeiu aeeghix ehmnnow bmoo eoks aeeguw

Step II: 36 19 38 15 10 2

Step III: 162 120 0

Step IV: 6 3

Step V: 81

Step V is the last step of the arrangement.

Answer:

15. Following the final solution we can say that 81 will be obtained in final step of the arrangement.

Hence, the correct answer is option C.

16. Following the final solution we can say that the numbers obtained in step IV are '6' and '3'.

Required Value = $6 \times 3 = 18$

Hence, the correct answer is option D.



17. Following the final solution we can say that 36 will represent 'Fear' in step II.
Hence, the correct answer is option A.

18. Following the final solution we can say that 'aeeguw' will be obtained in step I of the given arrangement.
Hence, the correct answer is option E.

19. Following the final solution we can say that the numbers obtained in step III are '162', '120' and '0'.

Required Value = $162 + 120 + 0 = 282$

Hence, the correct answer is option B.

Common Explanation for (20-24):

Reference:

Input: 79 create history 88 imagined 94 every 63 leader 96

Step I: 88 79 create history imagined 94 63 leader 96 every

Step II: 88 79 96 history imagined 94 63 leader every create

Step III: 88 79 96 history imagined 94 63 every create leader

Step IV: 88 79 96 94 imagined 63 every create leader history

Step V: 88 79 96 94 63 every create leader history imagined

Step V is the last step of the arrangement.

Inference:

Here in the above input the numbers and the words are arranged in the different manner.

Arrangement of numbers:

Here the numbers are arranged as the number whose sum of the digits is highest is arranged on the extreme left in the Step I after that the number whose sum of the digits is second highest is arranged the right of the number arranged in step I.

Number Digits Sum

88 16

79 16

96 15

94 13

63 9

As the digits sum of both '88' and '79' is same, then the highest number i.e. 88 will be arranged first.

Number Arrangement

Step

88 Step I

79 Step II

96 Step III

94 Step IV

63 Step V

As the arrangement of the numbers follows the left to right pattern therefore it might be possible that some numbers are arranged automatically.

Arrangement of words: